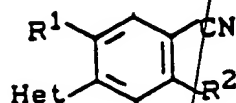


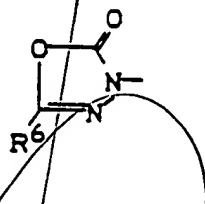
WE CLAIM:

1. An N-aryl-substituted nitrogen-containing heterocycle of the formula



in which

Het represents a heterocycle of the formula



R<sup>1</sup> represents hydrogen or halogen and

R<sup>2</sup> represents halogen or a radical -X-R<sup>9</sup>,

where

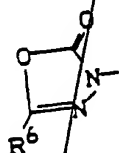
R<sup>6</sup> represents hydrogen, alkyl, alkoxyalkyl, halogenoalkyl, alkenyl, halogenoalkenyl, alkynyl, halogenoalkynyl, or represents optionally substituted cycloalkyl,

$R^9$  represents in each case optionally substituted alkyl, alkenyl, alkynyl or cycloalkyl and

X represents oxygen or sulphur.

2. An N-aryl-substituted nitrogen-containing heterocycle as claimed in claim 1, in which

Het represents a heterocycle of the formula



$R^1$  represents hydrogen, fluorine, chlorine or bromine and

$R^2$  represents fluorine, chlorine or bromine, or represents a radical  $-X-R^9$ ,

where

$R^6$  represents hydrogen, represents in each case straight-chain or branched alkyl having 1 to 6 carbon atoms, alkenyl having 3 to 6 carbon atoms, alkynyl having 3 to 6 carbon atoms, halogenoalkyl having 1 to 4 carbon atoms and 1 to 9 identical

or different halogen atoms, halogenoalkenyl having 3 to 6 carbon atoms and 1 to 5 identical or different halogen atoms, halogenoalkinyl having 3 to 6 carbon atoms and 1 to 5 identical or different halogen atoms or alkoxyalkyl having in each case 1 to 4 carbon atoms in the individual straight-chain or branched alkyl moieties or represents cycloalkyl which has 3 to 7 carbon atoms and which is optionally monosubstituted or polysubstituted by identical or different substituents, suitable substituents being: halogen, and in each case straight-chain or branched alkyl or alkoxy, each having 1 to 4 carbon atoms,

$R^8$  represents in each case straight-chain or branched alkyl having 1 to 8 carbon atoms, alkenyl having 2 to 8 carbon atoms, alkynyl having 3 to 8 carbon atoms, halogenoalkyl having 1 to 8 carbon atoms and 1 to 17 identical or different halogen atoms, halogenoalkenyl having 2 to 8 carbon atoms and 1 to 15 identical or different halogen atoms, halogenoalkinyl having 3 to 8 carbon atoms and 1 to 13 identical or different halogen atoms, represents cyanoalkyl, alkoxyalkyl, alkylthioalkyl, halogenoalkoxyalkyl, alkoxyalkoxyalkyl, (bis-alkoxy)alkyl, (bis-alkylthio)alkyl, alkylcarbonylalkyl, alkoxy-carbonylalkyl or alkoxyalkoxycarbonylalkyl, each having 1 to 8 carbon atoms in the individual alkyl moieties and if appropriate 1 to 9 identical or different halogen atoms, represents cycloalkyl, cycloalkyloxycarbonylalkyl or cycloalkyl-

alkyl, having in each case 3 to 7 carbon atoms in the cycloalkyl moiety and if appropriate 1 to 4 carbon atoms in the straight-chain or branched alkyl moiety and each of which is optionally monosubstituted or polysubstituted by identical or different substituents, suitable substituents in each case being: halogen and in each case straight-chain or branched alkyl or alkoxy, each having 1 to 4 carbon atoms,  $R^9$  furthermore represents oxetanylalkyl, tetrahydrofuranylalkyl, tetrahydrofuranylalkyloxycarbonylalkyl or tetrahydropyranylalkyl, each of which has 1 to 3 carbon atoms in the respective alkyl moieties and each of which is optionally substituted by alkyl having 1 to 4 carbon atoms or  $R^9$  represents aralkyl which has 6 to 10 carbon atoms in the aryl moiety and 1 to 4 carbon atoms in the straight-chain or branched alkyl moiety and which is optionally monosubstituted or polysubstituted by identical or different substituents, suitable aryl substituents being:

halogen, cyano, nitro, in each case straight-chain or branched alkyl, alkoxy, alkylthio or alkoxycarbonyl, each having 1 to 4 carbon atoms, or in each case straight-chain or branched halogenoalkyl, halogenoalkoxy or halogenoalkylthio, each having 1 to 4 carbon atoms and 1 to 9 identical or different halogen atoms, and

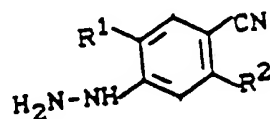
X represents oxygen or sulphur.

3. A herbicidal and plant growth-regulating composition comprising a herbicidally or plant growth regulating effective amount of a N-aryl-substituted nitrogen-containing heterocycle according to claim 1, in admixture with a diluent.

4. A method of combating unwanted vegetation which comprises applying to such vegetation or to a locus from which it is desired to exclude such vegetation a herbicidally effective amount of a compound according to Claim 1.

5. A method for regulating the growth of plants which comprises applying to such plants or to a locu in which such plants are grown or to be grown a plant growth regulating effective amount of a compound according to Claim 1.

6. A 4-cyanophenylhydrazine of the formula



in which

$R^1$  represents hydrogen or halogen and

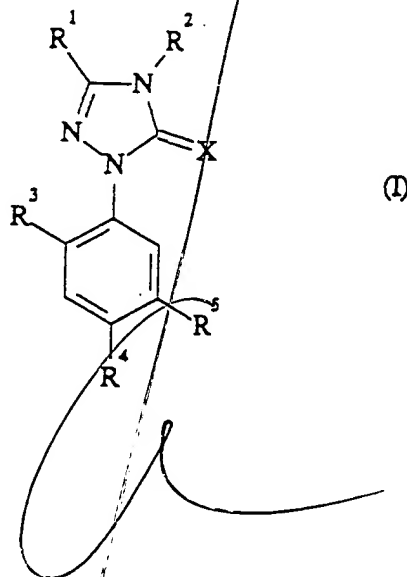
$R^2$  represents halogen or represents a radical  $-X-R^9$ ,

where

$X$  represents oxygen or sulphur and

$R^9$  represents in each case optionally substituted alkyl, alkenyl, alkynyl or cycloalkyl.

7. A substituted triazolinone of the general formula (I)



wherein

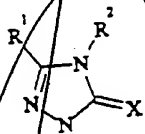
$R^1$  represents halogenoalkyl,

$R^2$  represents hydrogen, amino, cyano, alkyl, alkenyl, alkynyl, halogenoalkyl, halogenoalkenyl, halogenoalkynyl, alkoxyalkyl, alkylideneimino, or in each case optionally substituted cycloalkyl or cycloalkylalkyl,

$R^3$  represents hydrogen or halogen,

$R^4$  represents cyano or nitro,

$R^5$  represents nitro, cyano, halogen, heterocyclalkoxy, a radical of the formula  $R^6$ ,  $-O-R^6$ ,  $-S-R^6$ ,  $-S(O)-R^6$ ,  $-SO_2-R^6$ ,  $-SO_2-O-R^6$ ,  $-O-SO_2-R^6$ ,  $-C(O)-O-R^6$ ,  $-NR^6R^7$ ,  $-SO_2-NR^6R^7$ ,  $-C(O)-NR^6R^7$ ,  $-NH-P(O)(OR^6)(R^7)$  or  $-NH-P(O)(OR^6)(OR^7)$  or a radical of the formula



and

$X$  represents oxygen or sulphur, where

$R^6$  and  $R^7$  independently of one another in each case represent hydrogen or in each case straight-chain or branched, optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl, arylalkyl or aryl.

8. A substituted triazolinone of the general formula (I) according to Claim 1, wherein

$R^1$  represents straight-chain or branched halogeno-alkyl having 1 to 6 carbon atoms and 1 to 13 identical or different halogen atoms, in particular fluorine, chlorine, bromine or iodine,

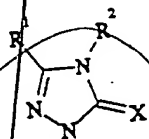
$R^2$  represents hydrogen, amino, cyano, straight-chain or branched alkyl having 1 to 8 carbon atoms, in each case straight-chain or branched alkenyl or alkynyl, each of which has 2 to 6 carbon atoms, straight-chain or branched halogenoalkyl having 1 to 6 carbon atoms and 1 to 13 identical or different halogen atoms, in particular fluorine, chlorine, bromine or iodine, in each case straight-chain or branched halogenoalkenyl or halogenoalkynyl, each of which has 2 to 6 carbon atoms and 1 to 11 identical or different halogen atoms, in particular fluorine, chlorine, bromine or iodine, straight-chain or branched alkoxyalkyl having 1 to 4 carbon atoms in each of the individual alkyl moieties, straight-chain or branched alkylideneimino having 1 to 8 carbon atoms, or cycloalkyl or cycloalkylalkyl, each of which has 3 to 8 carbon atoms in the cycloalkyl moiety and, if appropriate, 1 to 4 carbon atoms in the straight-chain or branched alkyl moiety, and each of which is optionally monosubstituted or polysubstituted in the cycloalkyl moiety by particular fluorine, chlorine, bromine and/or iodine,



$R^3$  represents hydrogen, fluorine, chlorine, bromine or iodine,

$R^4$  represents cyano or nitro,

$R^5$  represents nitro, cyano, fluorine, chlorine, bromine, iodine or heterocyclyl  $-C_1-C_4$ -alkoxy, the heterocyclyl radical being represented by a three- to seven-membered, optionally benzo-fused, saturated or unsaturated heterocycle having 1 to 3 identical or different hetero atoms, in particular nitrogen, oxygen and/or sulphur, or a radical of the formula  $R^6$ ,  $-O-R^6$ ,  $-S-R^6$ ,  $-S(O)-R^6$ ,  $-SO_2-R^6$ ,  $-SO_2-O-R^6$ ,  $-O-SO_2-R^6$ ,  $-C(O)-O-R^6$ ,  $-NR^6R^7$ ,  $-SO_2-NR^6R^7$ ,  $-C(O)-NR^6R^7$ ,  $-NH-P(O)(OR^6)(R^7)$  or  $-NH-P(O)(OR^6)(OR^7)$  or a radical of the formula



and

$X$  represents oxygen or sulphur, where

$R^6$  and  $R^7$  independently of one another in each case represent hydrogen or straight-chain or branched alkyl which has 1 to 8 carbon atoms and which is optionally monosubstituted or polysubstituted by identical or different substituents, suitable substituents being:

halogen, in particular fluorine, chlorine, bromine and/or iodine, cyano, carboxyl, carbamoyl, in each case straight-chain or branched alkoxy, alkoxyalkoxy, alkylthio, alkylsulphinyl, alkylsulphonyl, alkoxycarbonyl, alkoxycarbonylalkyl, N-alkylaminocarbonyl, cycloalkylaminocarbonyl, N,N-dialkylaminocarbonyl, trialkylsilyl or alkylsulphonylaminocarbonyl, each of which has 1 to 8 carbon atoms in the individual alkyl moieties, or heterocyclyl, the heterocyclyl being represented by a five- to seven-membered, optionally benzo-fused, saturated or unsaturated heterocycle having 1 to 3 identical or different hetero atoms, in particular nitrogen, oxygen and/or sulphur;

R<sup>6</sup> and R<sup>7</sup> furthermore represent alkenyl or alkynyl, each of which has 2 to 8 carbon atoms and each of which is optionally monosubstituted or polysubstituted by identical or different halogen substituents, in particular fluorine, chlorine, bromine and/or iodine;

R<sup>6</sup> and R<sup>7</sup> furthermore represent cycloalkyl which has 3 to 7 carbon atoms and which is optionally monosubstituted or polysubstituted by identical or different halogen substituents, in particular fluorine, chlorine, bromine and/or iodine, and/or by straight-chain or branched alkyl having 1 to 4 carbon atoms, or represent C<sub>3</sub>-C<sub>7</sub>-cycloalkyl-C<sub>1</sub>-C<sub>3</sub>-alkyl, or

R<sup>6</sup> and R<sup>7</sup> represent arylalkyl or aryl, each of which has 6 to 10 carbon atoms in the aryl moiety and, if appropriate, 1 to 4 carbon atoms in the straight-chain or branched alkyl moiety, and each of which is optionally monosubstituted or polysubstituted in the aryl moiety by identical or different substituents, suitable aryl substituents

in each case being:

halogen, cyano, nitro, in each case straight-chain or branched alkyl, alkoxy, alkylthio, alkylsulphinyl or alkylsulphonyl, each of which has 1 to 6 carbon atoms, in each case straight-chain or branched halogenoalkyl, halogenoalkoxy, halogenoalkylthio, halogenoalkylsulphinyl or halogenoalkylsulphonyl, each of which has 1 to 6 carbon atoms and 1 to 13 identical or different halogen atoms, in each case straight-chain or branched alkoxycarbonyl or alkoximinoalkyl, each of which has 1 to 6 carbon atoms in the individual alkyl moieties, and phenyl which is optionally monosubstituted or polysubstituted by identical or different halogen substituents and/or by straight-chain or branched alkyl or alkoxy, each of which has 1 to 6 carbon atoms, and/or by straight-chain or branched halogenoalkyl or halogenoalkoxy, each of which has 1 to 6 carbon atoms and 1 to 13 identical or different halogen atoms.

9. A substituted triazolinone of the general formula (I) according to Claim 1, wherein

R<sup>1</sup> represents straight-chain or branched halogenoalkyl having 1 to 4 carbon atoms and 1 to 9 identical or different halogen atoms, in particular fluorine, chlorine or bromine,

R<sup>2</sup> represents hydrogen, amino, cyano, straight-chain or branched alkyl having 1 to 6 carbon atoms, in each case straight-chain or branched alkenyl or alkynyl, each of which has 2 to 4 carbon atoms, straight-chain or branched halogenoalkyl having 1 to 4 carbon atoms and 1 to 9 identical or different halogen atoms, in particular fluorine, chlorine or bromine, in each case straight-chain or branched halogenoalkenyl or halogenoalkynyl, each of which has 2 to 4 carbon atoms and 1 to 7 identical or different halogen atoms, in particular fluorine, chlorine or bromine, straight-chain or branched alkoxyalkyl having 1 to 3 carbon atoms in each of the individual alkyl moieties, straight-chain or branched alkylideneimino having 1 to 6 carbon atoms, or cycloalkyl or cycloalkylalkyl, each of which has 3 to 7 carbon atoms in the cycloalkyl moiety and, if appropriate, 1 to 3 carbon atoms in the straight-chain or branched alkyl moiety, and each of which is optionally monosubstituted to tetrasubstituted in the cycloalkyl moiety by identical or different halogen substituents, in particular fluorine, chlorine and/or bromine,

R<sup>3</sup> represents hydrogen, fluorine, chlorine or bromine,

R<sup>4</sup> represents cyano or nitro,

N,N-dialkylaminocarbonyl, trialkylsilyl or alkylsulphonylaminocarbonyl, each of which has 1 to 6 carbon atoms in the individual alkyl moieties, or heterocyclyl, the heterocyclyl radical being represented by a five- or six-membered, saturated or unsaturated heterocycle having 1 to 3 identical or different hetero atoms, in particular nitrogen, oxygen and/or sulphur;

R<sup>6</sup> and R<sup>7</sup> furthermore represent straight-chain or branched halogenoalkyl having 1 to 4 carbon atoms and 1 to 9 identical or different halogen atoms, in particular fluorine, chlorine or bromine, and being optionally further substituted by C<sub>1-2</sub>alkoxycarbonyl, C<sub>1-6</sub>cycloalkylaminocarbonyl or cyano

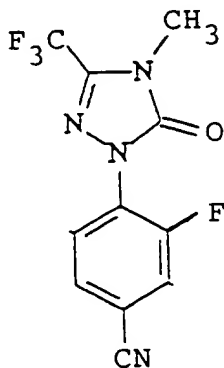
R<sup>6</sup> and R<sup>7</sup> furthermore represent alkenyl or alkynyl, each of which has 2 to 6 carbon atoms and each of which is optionally monosubstituted to trisubstituted by identical or different halogen substituents, in particular fluorine, chlorine or bromine;

R<sup>6</sup> and R<sup>7</sup> furthermore represent cycloalkyl which has 3 to 6 carbon atoms and which is optionally monosubstituted to tetrasubstituted by identical or different halogen substituents, in particular fluorine, chlorine or bromine, and/or by straight-chain or branched alkyl having 1 to 3 carbon atoms, or represent C<sub>3-6</sub>-cycloalkyl-C<sub>1-2</sub>-alkyl, or represent phenylalkyl or phenyl, the first-mentioned

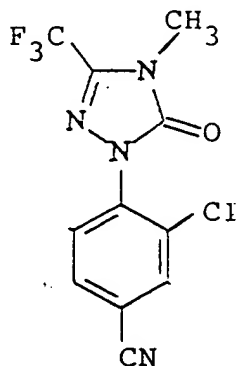
has 1 to 3 carbon atoms in the straight-chain or branched alkyl moiety and each of which is optionally monosubstituted to trisubstituted in the phenyl moiety by identical or different substituents, suitable phenyl substituents in each case being:

halogen, cyano, nitro, in each case straight-chain or branched alkyl, alkoxy, alkylthio, alkylsulphanyl or alkylsulphonyl, each of which has 1 to 4 carbon atoms, in each case straight-chain or branched halogenoalkyl, halogenoalkoxy, halogenoalkylthio, halogenoalkylsulphanyl or halogenoalkylsulphonyl, each of which has 1 to 4 carbon atoms and 1 to 9 identical or different halogen atoms, in each case straight-chain or branched alkoxy carbonyl or alkoximinoalkyl, each of which has 1 to 4 carbon atoms in the individual alkyl moieties, and phenyl which is optionally monosubstituted or polysubstituted by identical or different halogen substituents and/or by straight-chain or branched alkyl or alkoxy, each of which has 1 to 4 carbon atoms, and/or by straight-chain or branched halogenoalkyl or halogenoalkoxy, each of which has 1 to 4 carbon atoms and 1 to 9 identical or different halogen atoms.

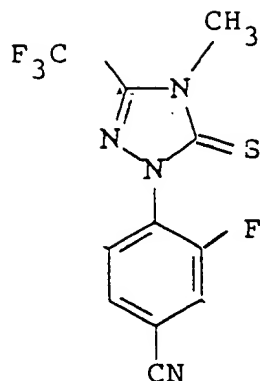
10. A substituted triazolinone according to Claim 129 wherein such compound is 1-(4-cyano-2-fluorophenyl)-4-methyl-3-trifluoromethyl-1,2,4-triazolin-5-one of the formula



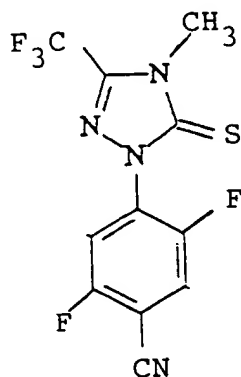
11. A substituted triazolinone according to Claim 129 wherein such compound is 1-(2-chloro-4-cyanophenyl)-4-methyl-3-trifluoromethyl-1,2,4-triazolin-5-one of the formula



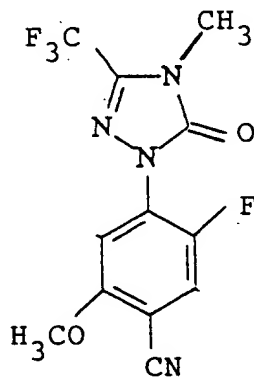
12. A substituted triazolinone according to Claim 129 wherein such compound is 1-(2-fluoro-4-cyanophenyl)-4-methyl-3-trifluoromethyl-1,2,4-triazolin-5-thione of the formula



13. A substituted triazolinone according to Claim 1<sup>25</sup> wherein such compound is 1-(2,5-difluoro-4-cyano-phenyl)-4-methyl-3-trifluoromethyl-1,2,4-triazolin-5-thione of the formula

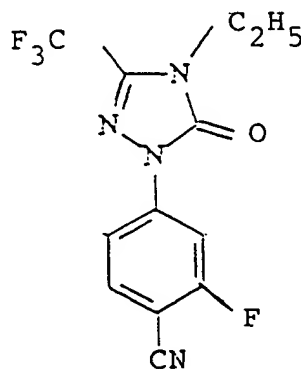


14. A substituted triazolinone according to Claim 1<sup>25</sup> wherein such compound is 1-(2-fluoro-4-cyano-5-methoxyphenyl)-4-methyl-3-trifluoromethyl-1,2,4-triazolin-5-one of the formula

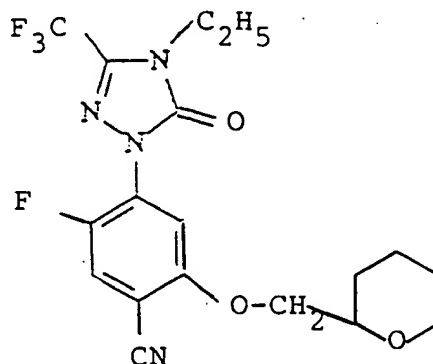




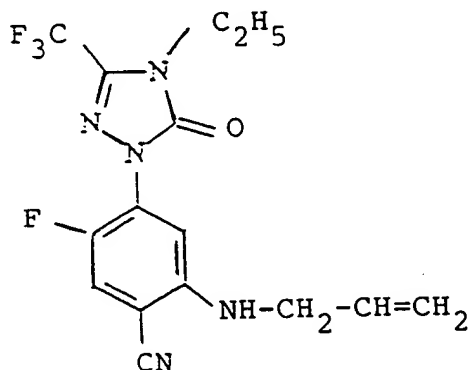
15. A herbicidal composition comprising a herbicidally effective amount of a compound according to Claim 1 and a diluent. 29
16. A method of combating unwanted vegetation which comprises applying to such vegetation or to a locus from which it is desired to exclude such vegetation a herbicidally effective amount of a compound according to Claim 1. 29
17. The method according to Claim 10, wherein such compound is
- 1-(4-cyano-2-fluorophenyl)-4-methyl-3-trifluoromethyl-1,2,4-triazolin-5-one
  - 1-(2-chloro-4-cyanophenyl)-4-methyl-3-trifluoromethyl-1,2,4-triazolin-5-one
  - 1-(2-fluoro-4-cyanophenyl)-4-methyl-3-trifluoromethyl-1,2,4-triazolin-5-thione
  - 1-(2,5-difluoro-4-cyanophenyl)-4-methyl-3-trifluoromethyl-1,2,4-triazolin-5-thione
  - 1-(2-fluoro-4-cyano-5-methoxyphenyl)-4-methyl-3-trifluoromethyl-1,2,4-triazolin-5-one.
18. A substituted triazolinone according to Claim 1 29 wherein such compound is 1-(4-cyano-3-fluorophenyl)-4-ethyl-3-trifluoromethyl-1,2,4-triazolin-5-one of the formula



19. A substituted triazolinone according to Claim 1 *29*  
 wherein such compound is  
 1-(4-cyano-2-fluoro-5-tetrahydro-4H-2yl-methoxy-  
 phenyl)-4-ethyl-3-trifluoromethyl-1,2,4-triazolin-  
 5-one of the formula



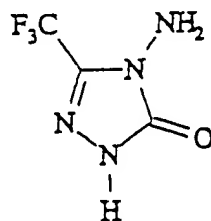
20. A substituted triazolinone according to Claim 1 *29*  
 wherein such compound is  
 1-(5-allylamino-4-cyano-2-fluorophenyl)-4-ethyl-  
 3-trifluoromethyl-1,2,4-triazolin-5-one  
 of the formula



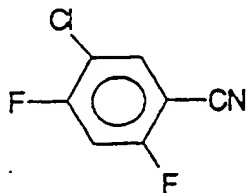
21. A composition acting against arthropods and  
 nematodes, in particular insects and arachnids  
 comprising an effective amount of a compound  
 according to Claim 1. *29*

22. A method of combating unwanted arthropods and nematodes, in particular insects and arachnids, which comprises applying to such locus from which it is desired to exclude such arthropods and nematodes, in particular insects and arachnids an effective amount of a compound according to Claim 1. <sup>29</sup>
23. The method according to Claim 16, <sup>22</sup> wherein such compound is
- 1-(4-cyano-3-fluorophenyl)-4-ethyl-3-trifluoromethyl-1,2,4-triazolin-5-one
- 1-(4-cyano-2-fluoro-5-tetrahydro-4H-2yl-methoxy-phenyl)-4-ethyl-3-trifluoromethyl-1,2,4-triazolin-5-one
- 1-(5-allylamino-4-cyano-2-fluorophenyl)-4-ethyl-3-trifluoromethyl-1,2,4-triazolin-5-one

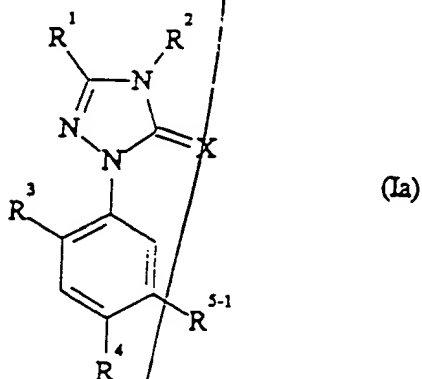
24. 4-Amino-3-trifluoromethyl-1H-1,2,4-triazolin-5-one



25. 2,4-Difluoro-5-chlorobenzonitrile



26. A substituted triazolinone of the general formula (Ia)



wherein

$R^1$  represents halogenoalkyl,

$R^2$  represents hydrogen, amino, cyano, alkyl, alkenyl, alkinyl, halogenoalkyl, halogenoalkenyl, halogenoalkinyl, alkoxyalkyl, alkylideneimino or in each case optionally substituted cycloalkyl or cycloalkylalkyl,

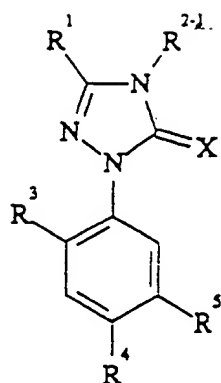
$R^3$  represents hydrogen or halogen,

$R^4$  represents cyano or nitro,

X represents oxygen or sulphur and

$R^{5-1}$  represents halogen.

27. A substituted triazolinone of the formula (Ib)



(Ib)

wherein

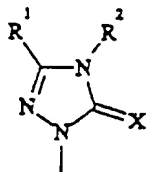
R<sup>1</sup> represents halogenoalkyl,

R<sup>2-1</sup> represents amino,

R<sup>3</sup> represents hydrogen or halogen,

R<sup>4</sup> represents cyano or nitro,

R<sup>5</sup> represents nitro, cyano, halogen, hetero-  
cyclyloxy, a radical of the formula R<sup>6</sup>, -O-R<sup>6</sup>,  
-S-R<sup>6</sup>, -S(O)-R<sup>6</sup>, -SO<sub>2</sub>-R<sup>6</sup>, -SO<sub>2</sub>-O-R<sup>6</sup>, -O-SO<sub>2</sub>-R<sup>6</sup>,  
-C(O)-O-R<sup>6</sup>, -NR<sup>6</sup>R<sup>7</sup>, -SO<sub>2</sub>-NR<sup>6</sup>R<sup>7</sup>, -C(O)-NR<sup>6</sup>R<sup>7</sup>,  
-NH-P(O)(OR<sup>6</sup>)(R<sup>7</sup>) or -NH-P(O)(OR<sup>6</sup>)(OR<sup>7</sup>) or a  
radical of the formula

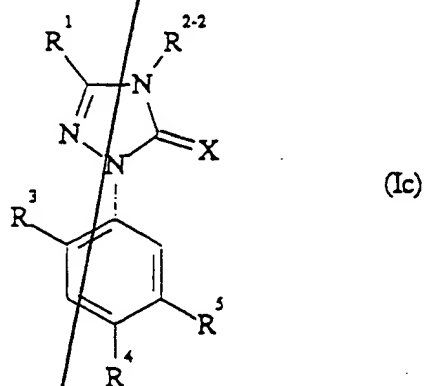


and

X represents oxygen or sulphur, where

R<sup>6</sup> and R<sup>7</sup> independently of one another in each case represent hydrogen or in each case straight-chain or branched, optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl or aryl.

28. A substituted triazolinone of the formula (Ic)



wherein

R<sup>1</sup> represents halogenoalkyl,

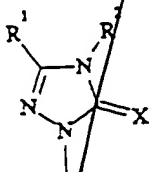
R<sup>2-2</sup> represents hydrogen,

R<sup>3</sup> represents hydrogen or halogen,

R<sup>4</sup> represents cyano or nitro,

R<sup>5</sup> represents nitro, cyano, halogen, hetero-

cyclyloxy, a radical of the formula  $R^6$ ,  $-O-R^6$ ,  $-S-R^6$ ,  $-S(O)-R^6$ ,  $-SO_2-R^6$ ,  $-SO_2-O-R^6$ ,  $-O-SO_2-R^6$ ,  $-C(O)-O-R^6$ ,  $-NR^6R^7$ ,  $-SO_2-NR^6R^7$ ,  $-C(O)-NR^6R^7$ ,  $-NH-P(O)(OR^6)(R^7)$  or  $-NH-P(O)(OR^6)(OR^7)$  or a radical of the formula



and

X represents oxygen or sulphur, where

$R^6$  and  $R^7$  independently of one another in each case represent hydrogen or in each case straight-chain or branched, optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl or aryl.

add A1

add B1